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CLAIMS

What is claimed:

1-43 (Cancelled)

44. (Currently Amended) A subscriber line interface circuit (SLIC) comprising:

a tip amplifier having a tip amplifier output that couples a tip amplifier output current to a tip portion of a subscriber loop;

a ring amplifier having a ring amplifier output that couples a ring amplifier output current to a ring portion of said subscriber loop;

a tip amplifier transient output current limit circuit, which is operative to monitor said tip amplifier output current individually for both tip source and tip sink currents, and to controllably limit said tip amplifier output current for both said tip source and tip sink currents, exclusive and irrespective of said ring amplifier output current, in accordance with at least one programmable tip amplifier output current limit therefor; and

a ring amplifier transient output current limit circuit, which is operative to monitor said ring amplifier output current individually for both ring source and ring sink currents, and to controllably limit said ring amplifier output current for both said ring source and ring sink currents, exclusive and irrespective of said tip amplifier output current, in accordance with at least one programmable ring amplifier output current limit therefor.

45. (Cancelled)

46. (Currently amended) The SLIC according to claim 44, wherein both said tip source and tip sink current limits are at least one programmable tip amplifier output current limits ~~said tip amplifier output current limit circuit is operative to monitor both said tip amplifier source current~~

~~and said tip amplifier sink current, and to controllably limit both said tip amplifier source current and said tip amplifier sink current, in accordance with said at least one programmable tip amplifier output current limit therefor and exclusive and irrespective of said ring amplifier source current and said ring amplifier sink current, and wherein said ring amplifier output current limit circuit is operative to monitor both said ring amplifier source current and said ring amplifier sink current, and to controllably limit and both said ring amplifier source current and said ring amplifier sink current, in accordance with said at least one source and ring sink current limits are programmable limits ring amplifier output current limit therefor and exclusive and irrespective of said tip amplifier source current and said tip amplifier sink current.~~

47. (Cancelled)

48. (Currently amended) The SLIC according to claim 47 46, wherein said programmable tip amplifier sink current limit is higher than said programmable tip amplifier source current limit, and wherein said programmable ring amplifier sink current limit is higher than said programmable ring amplifier source current limit.

49. (Previously Presented) The SLIC according to claim 48, wherein said programmable tip amplifier sink current limit is on the order of twenty percent higher than said programmable tip amplifier source current limit, and wherein said programmable ring amplifier sink current limit is on the order of twenty percent higher than said programmable ring amplifier source current limit.

50. (Currently amended) The SLIC according to claim 44, further including
a direct current (DC) limit circuit, coupled to said tip amplifier output and said ring amplifier output, and being operative to limit DC current through said subscriber loop to a prescribed DC current limit; and wherein

~~said tip amplifier output current limit circuit is operative to controllably limit a~~
~~programmable tip amplifier output current limit tip amplifier transient output current in accordance~~
~~with a programmable tip amplifier transient output current limit which is higher than said prescribed~~
~~DC current limit, and said programmable ring amplifier output current limit circuit is operative to~~
~~controllably limit a ring amplifier transient output current in accordance with a programmable ring~~
~~amplifier transient output current limit which is higher than said prescribed DC current limit.~~

51. (Currently amended) The SLIC according to claim 50, wherein said programmable tip amplifier ~~transient~~ output current limit is on the order of but less than fifty percent higher than said prescribed DC current limit, and wherein said programmable ring amplifier ~~transient~~ output current limit is on the order of but less than fifty percent higher than said prescribed DC current limit.

52. (Currently Amended) A subscriber line interface circuit (SLIC) comprising:

- a tip amplifier having a tip amplifier output that couples a tip amplifier output current to a tip portion of a subscriber loop;
- a ring amplifier having a ring amplifier output that couples a ring amplifier output current to a ring portion of said subscriber loop;
- a direct current (DC) limit circuit, coupled to said tip amplifier output and said ring amplifier output, and being operative to limit DC current through said subscriber loop to a prescribed DC current limit;
- a tip amplifier transient output current limit circuit, which is operative to monitor said tip amplifier output current individually for both tip source and tip sink currents, and to controllably limit said tip amplifier output current for both said tip source and tip sink currents, exclusive and

irrespective of said ring amplifier output current, in accordance with at least one programmable tip amplifier output current limit therefor; and

a ring amplifier output current limit circuit, which is operative to monitor said ring amplifier output current individually for both ring source and ring sink currents, and to controllably limit said ring amplifier output current for both said ring source and ring sink currents, exclusive and irrespective of said tip amplifier output current, in accordance with at least one programmable ring amplifier output current limit therefor.

53-54. (Cancelled)

55. (Previously Presented) The SLIC according to claim 52, wherein both said tip source and tip sink current limits are programmable limits and both said ring source and ring sink current limits are programmable limits ~~said tip amplifier transient output current limit circuit is operative to individually monitor said tip amplifier source current and to limit said tip amplifier source current in accordance with a relationship between said tip amplifier source current and a programmable tip amplifier source current limit therefor and exclusive and irrespective of said ring amplifier source current and said ring amplifier sink current, and to individually monitor said tip amplifier sink current and to limit said tip amplifier sink current in accordance with a relationship between said tip amplifier sink current and a programmable tip amplifier sink current limit therefor and exclusive and irrespective of said ring amplifier source current and said ring amplifier sink current, and wherein said ring amplifier transient output current limit circuit is operative to individually monitor said ring amplifier source current and to limit said ring amplifier source current in accordance with a relationship between said ring amplifier source current and a programmable ring amplifier source current limit therefor and exclusive and irrespective of said tip amplifier source current and said tip amplifier sink current, and to individually monitor said ring amplifier sink current and to limit said~~

~~ring amplifier sink current in accordance with a relationship between said ring amplifier sink current and a programmable ring amplifier sink current limit therefor and exclusive and irrespective of said tip amplifier source current and said tip amplifier sink current.~~

56. (Previously Presented) The SLIC according to claim 55, wherein said programmable tip amplifier sink current limit is higher than said programmable tip amplifier source current limit, and wherein said programmable ring amplifier sink current limit is higher than said programmable ring amplifier source current limit.

57. (Previously Presented) The SLIC according to claim 56, wherein said programmable tip amplifier sink current limit is on the order of twenty percent higher than said programmable tip amplifier source current limit, and wherein said programmable ring amplifier sink current limit is on the order of twenty percent higher than said programmable ring amplifier source current limit.

58-59. (Cancelled)

60. (Currently Amended) A method for limiting a tip amplifier output current applied by a tip amplifier of a subscriber line interface circuit (SLIC) to a tip portion of a subscriber loop, and for limiting a ring amplifier output current applied by a ring amplifier of said SLIC to a ring portion of said subscriber loop, comprising the steps of:

(a) monitoring said tip amplifier output current individually for both tip source and tip sink currents, and to controllably limit said tip amplifier output current for both said tip source and tip sink currents, exclusive and irrespective of said ring amplifier output current, in accordance with at least one programmable tip amplifier output current limit therefor; and

(b) monitoring said ring amplifier output current individually for both ring source and ring sink currents, and to controllably limit said ring amplifier output current for both said ring

source and ring sink currents, exclusive and irrespective of said tip amplifier output current, in accordance with at least one programmable ring amplifier output current limit therefor.

61-62. (Cancelled)

63. (Currently amended) The method according to claim 60, wherein both said tip source and tip sink current limits are programmable limits and both said ring source and ring sink current limits are programmable limits ~~step (a) comprises individually monitoring said tip amplifier source current and limiting said tip amplifier source current in accordance with a relationship between said tip amplifier source current and a programmable tip amplifier source current limit therefor and exclusive and irrespective of said ring amplifier source current and said ring amplifier sink current, and individually monitoring said tip amplifier sink current and limiting said tip amplifier sink current in accordance with a relationship between said tip amplifier sink current and a programmable tip amplifier sink current limit therefor and exclusive and irrespective of said ring amplifier source current and said ring amplifier sink current, and wherein~~

~~step (b) comprises individually monitoring said ring amplifier source current and limiting said ring amplifier source current in accordance with a relationship between said ring amplifier source current and a programmable ring amplifier source current limit therefor and exclusive and irrespective of said tip amplifier source current and said tip amplifier sink current, and individually monitoring said ring amplifier sink current and limiting said ring amplifier sink current in accordance with a relationship between said ring amplifier sink current and a programmable ring amplifier sink current limit therefor and exclusive and irrespective of said tip amplifier source current and said tip amplifier sink current.~~

64. (Previously Presented) The method according to claim 63, wherein said programmable tip amplifier sink current limit is higher than said programmable tip amplifier source current limit, and wherein said programmable ring amplifier sink current limit is higher than said programmable ring amplifier source current limit.

65. (Previously Presented) The method according to claim 64, wherein said programmable tip amplifier sink current limit is on the order of twenty percent higher than said programmable tip amplifier source current limit, and wherein said programmable ring amplifier sink current limit is on the order of twenty percent higher than said programmable ring amplifier source current limit.

66. (Currently amended) The method according to claim 60, further including the step of:

(c) limiting DC current through said subscriber loop to a prescribed DC current limit, and wherein

step (a) comprises controllably limiting ~~a tip amplifier transient output current~~ at least one of said tip source and tip sink current in accordance with said at least one programmable tip amplifier output current limit ~~a programmable tip amplifier transient output current limit~~ which is higher than said prescribed DC current limit, and

step (b) comprises controllably limiting ~~a ring amplifier transient output current~~ at least one of said ring source and ring sink current in accordance with said at least one programmable ring amplifier output current limit ~~a programmable ring amplifier transient output current limit~~ which is higher than said prescribed DC current limit.

67. (Previously Presented) The method according to claim 66, wherein said programmable tip amplifier transient output current limit is on the order of but less than fifty percent higher than said prescribed DC current limit, and wherein said programmable ring amplifier transient output current limit is on the order of but less than fifty percent higher than said prescribed DC current limit.